

# ISCPC® Intecolor® Emulator

## User's Manual

Manual P/N PE999373-ISCPC-010-**BP01**

Custom configuration for the W. H. Zimmer Generating Station, Moscow, Ohio  
(A Duke Energy Company)



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## Setting Up the ISCPC® Emulator

### Installing the ISCPC®

The ISCPC® Intecolor® Emulator supports all features of the original Intecolor® terminal. In addition, this release supports the Betalog 4000 button box. A hardware kit is supplied containing four (4) screws to hard mount the unit to a VESA compliant 100mm mounting pattern. Alternatively, rubber feet are provided to place on a desktop. Since the product is extremely lightweight, Velcro™ mounting would be suitable to mount the unit to any flat surface deemed necessary.

The ISCPC® Intecolor® Emulator product contains the following:

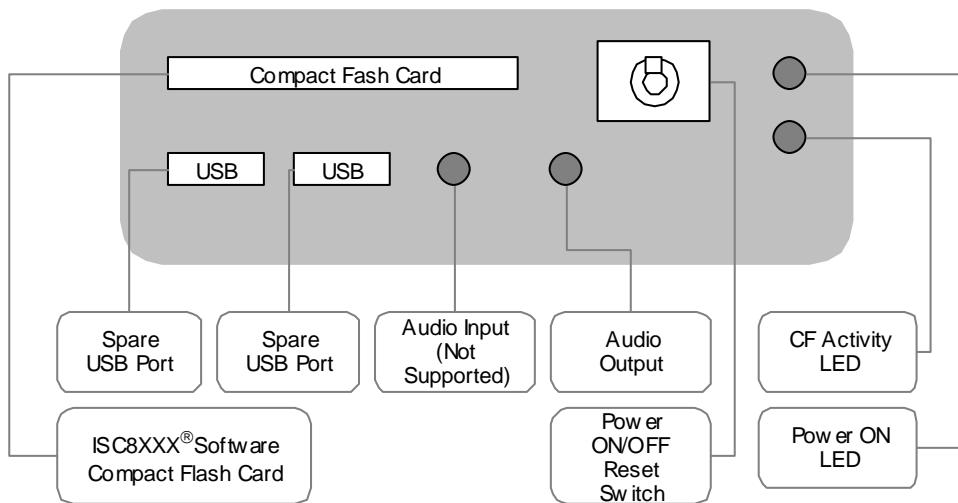
- The ISCPC® Intecolor® Emulator unit
- The ITE8001® Intecolor® Emulator software on Compact Flash media
- USB licensing key
- Wall mount power supply
- VGA video cable 1-foot HD15M to HD15M
- COM1 RS-232C cable 1-foot DB9F to DB25M
- DB25F to DB25F gender changer
- Hardware kit (4-screws, 4-rubber feet, ample strips of Velcro™)
- ISCPC Manual (P/N PE999373-ISCPC-010-BP01)

The wall-mount power supply must be connected to the ISCPC® power input port. In addition, a standard PC/AT PS/2 keyboard must be connected to the PS/2 port to select the various setup selections. Once the settings are correctly selected and saved, the keyboard is no longer needed unless required by the application.

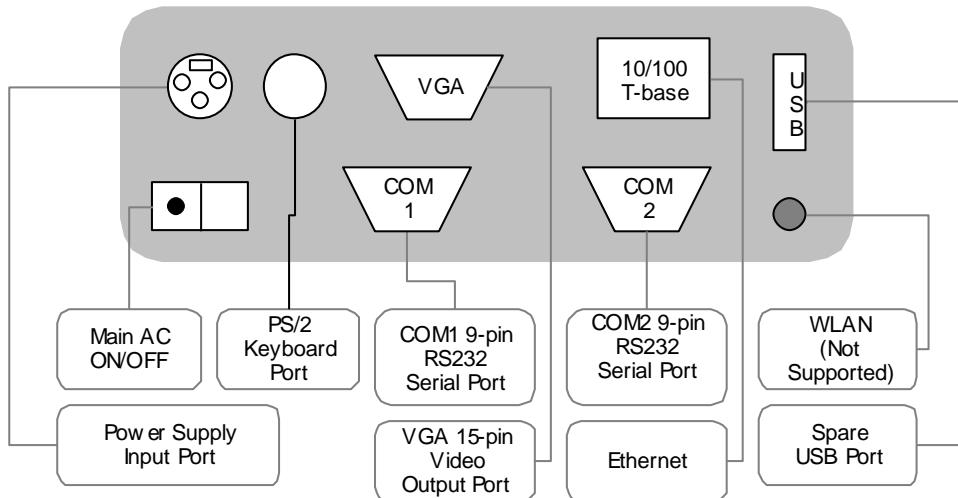
**The USB license key must always be connected to the USB port on the rear side of the ISCPC® unit as indicated below, otherwise the product will not function.**

The ISCPC® has two power switches. The main power supply “rocker” switch must be set ON (white dot depressed) on the rear of the unit. A “soft start” power switch is located on the front of the unit. This is a pushbutton switch that acts as a “reset switch”.

Pictured below are the front and rear views of the ISCP® unit.



**Figure 1:** Front View of the ISPC® unit



**Figure 2:** Rear View of the ISPC® unit

## Initial Hardware & Cabling Hookup

**NOTE:** Before shipment, cables, software, and license key are preconfigured and attached to the ISCPC® Emulator unit. The procedure below is meant to outline the connections should something become unplugged in shipment or on site.

Using the diagrams above, to determine the following cabling hookup requirements:

- 1) ISCPC® wall-mount power supply connected to the “Power Supply Input Port”. The wall-mount power supply itself must be plugged in any AC voltage source supplying 100-240VAC 50/60 Hertz. The actual output of the power supply is +5VDC @ 3A.
- 2) The 1-foot HD15M to HD15M video cable must be connected on the ISCPC® “Video Output Port” and connected to a VGA compliant monitor (CRT or LCD). If a longer cable is required, any extension HD15F to HD15M video cable may be used (not to exceed 16 feet).
- 3) The 1-foot DB9F to DB25M serial cable must be connected to the ISCPC® “COM1”.
- 4) Connect the DB25F to DB25F gender changer to the “COM1” cable. This step makes the cable gender compatible with the original application and provides the necessary mounting points to secure the application host cable.
- 5) The existing host RS232 cable (formerly connected to Intecolor® 8865 terminal) must be connected to the open end of the DB25F gender changer (COM1).
- 6) The ITE8001® Compact Flash (CF) software must be installed into the CF slot on the front of the ISCPC® (typically installed before unit shipment).
- 7) The ITE8001® USB license key must be installed on the rear USB port (typically installed before unit shipment).

- 8) Connect a PC/AT PS2-style keyboard (customer supplied) to the "PS/2 Keyboard Port". This will be needed to correctly setup the ITE8001®'s parameters.
- 9) Turn on the LCD or CRT monitor power switch.
- 10) Position the ISCPC® main power rocker switch to ON (white dot depressed).
- 11) Press the ON/OFF button on front of ISCPC®. A green LED will light indicating the ISCPC® has power.

On power-up, the ISCPC® Emulator takes a few moments to boot from the compact flash software card. The entire process to load the emulator environment takes less than 30 seconds. Once finished loading, the emulator will initialize and present the "ITE8001® V2.20" header message (or custom header) on the display monitor. At this point, the ISCPC® will be fully functional as a standard Intecolor® 8001, 3800, or 8800 Series terminal.

Using the PC/AT keyboard, follow the steps below to correctly configure the ITE8001® software for the application. Once selections have been made AND stored, the keyboard may be removed.

## **Connecting the Batalog 4000 Button Box**

A standard "off-the-shelf" DB9F to DB25M Serial cable (null modem type) must be connected to the ISCPC® "COM2" (DB9), and connected to the Batalog 4000 button box (DB25M). A Belkin® part number F2L088-XX may be used. The XX=03 (3-foot), XX=06 (6-foot). This cable is not supplied.

## **Retrofitting the Batalog 4000 Button Box**

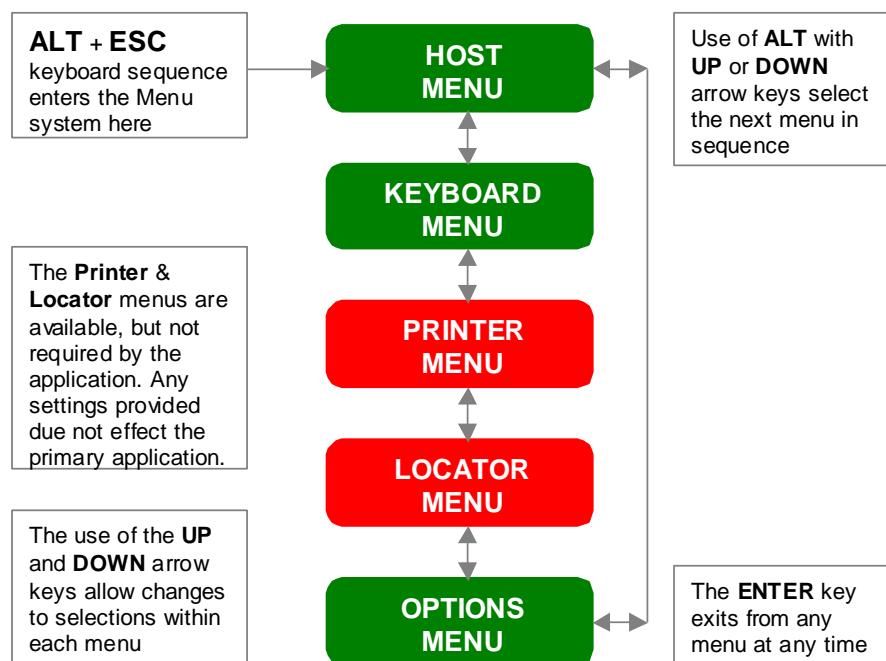
Modifications to the Batalog 4000 button box are outlined at the end of this document.

## SETUP MENU OPERATION

The ISCPC® Intecolor® Emulator provides a Setup Menu system to allow changes to most parameters normally not changeable on the standard Intecolor® terminal. The menus are similar in appearance to those of the standard terminal and may be accessed, modified, and saved in a similar manner.

### Entering Setup

The **Alt + Esc** keyboard sequence enters the Setup Menu. (Simply hold down the **Alt** key and press the **Esc** key together). The first menu to appear will be the HOST MENU.

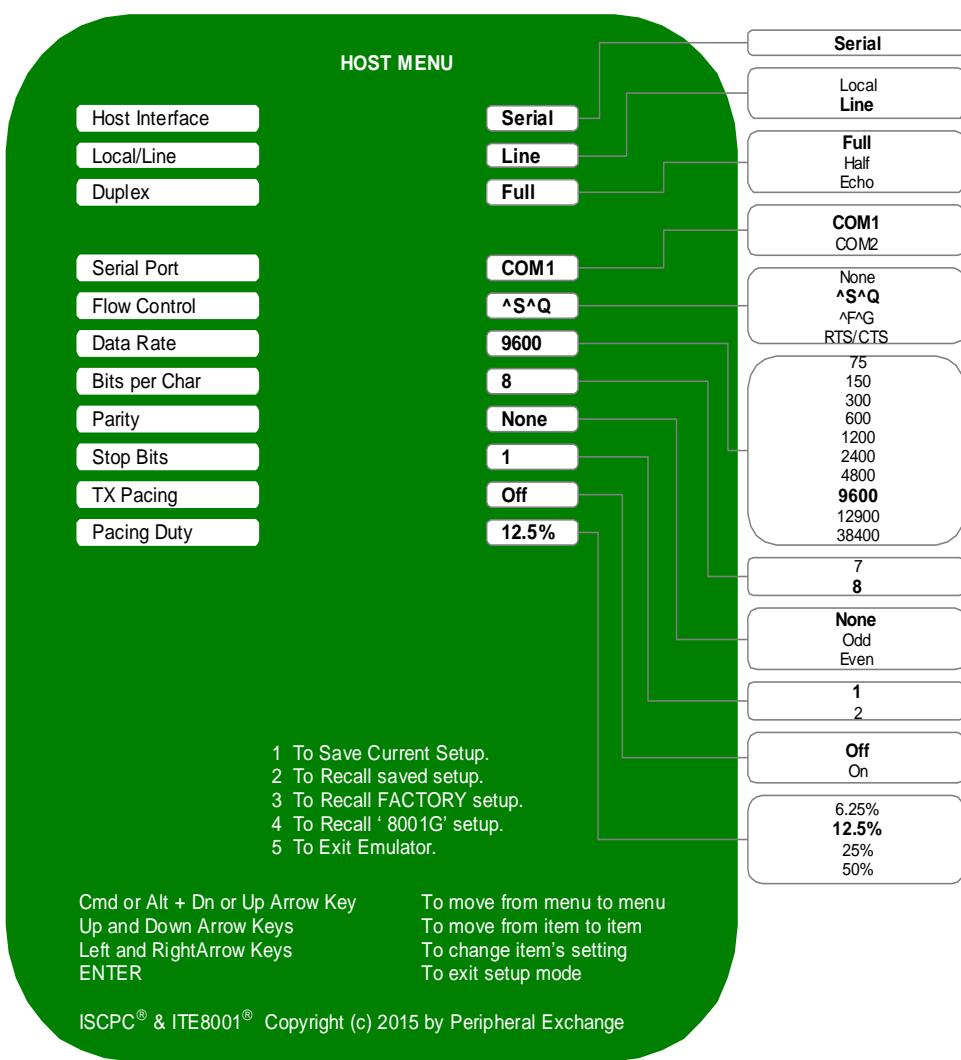


**Figure 3.** Menu System Flow Diagram

In this special ISCPC® implementation, the typical default values are highlighted in bold. In addition, the Printer and Locator Menu are not required to support the application, although these functions are fully functional.

## Host Menu

The Host Menu allows changes to parameters dealing with host I/O communications. The I/O port, data rate, duplex, and related parameters may be changed to meet the user's application and then saved.



- 1 To Save Current Setup.
- 2 To Recall saved setup.
- 3 To Recall FACTORY setup.
- 4 To Recall '8001G' setup.
- 5 To Exit Emulator.

Cmd or Alt + Dn or Up Arrow Key  
 Up and Down Arrow Keys  
 Left and Right Arrow Keys  
 ENTER

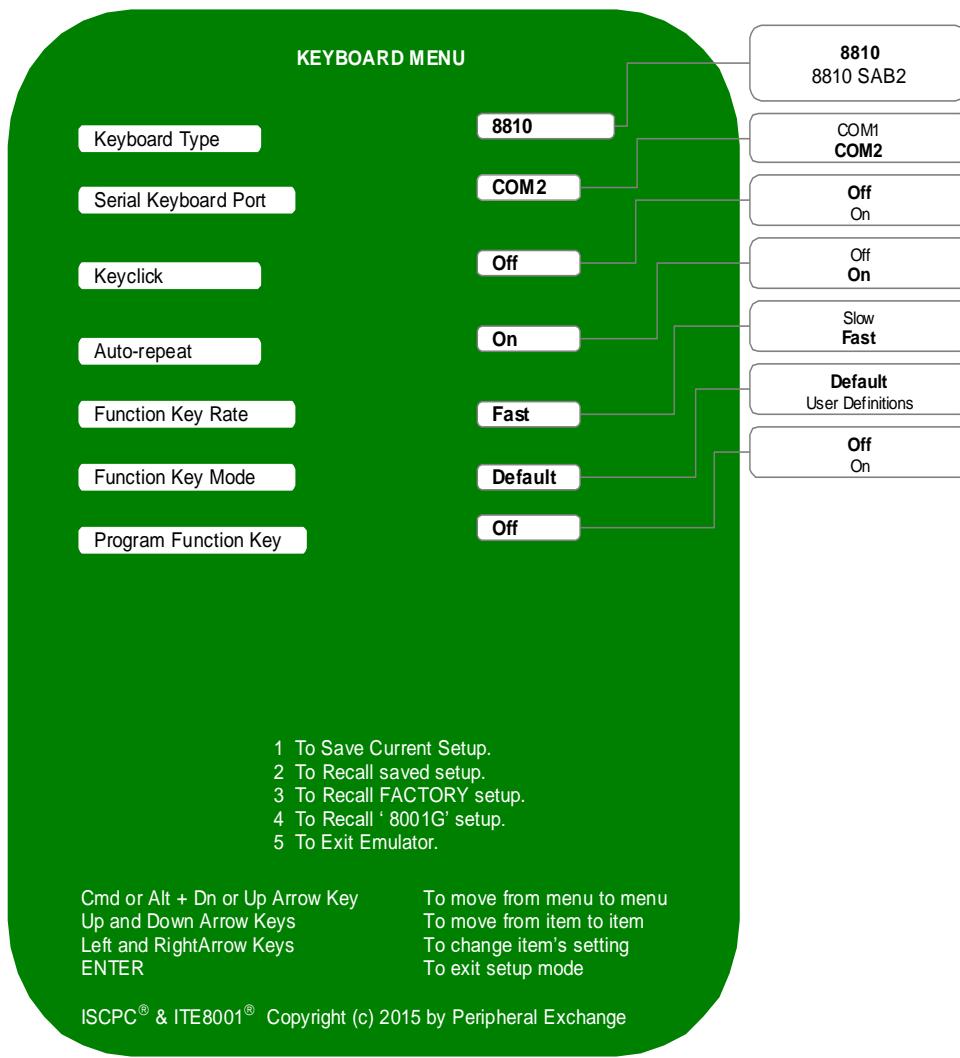
To move from menu to menu  
 To move from item to item  
 To change item's setting  
 To exit setup mode

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**Figure 4. Host Menu**

## Keyboard Menu

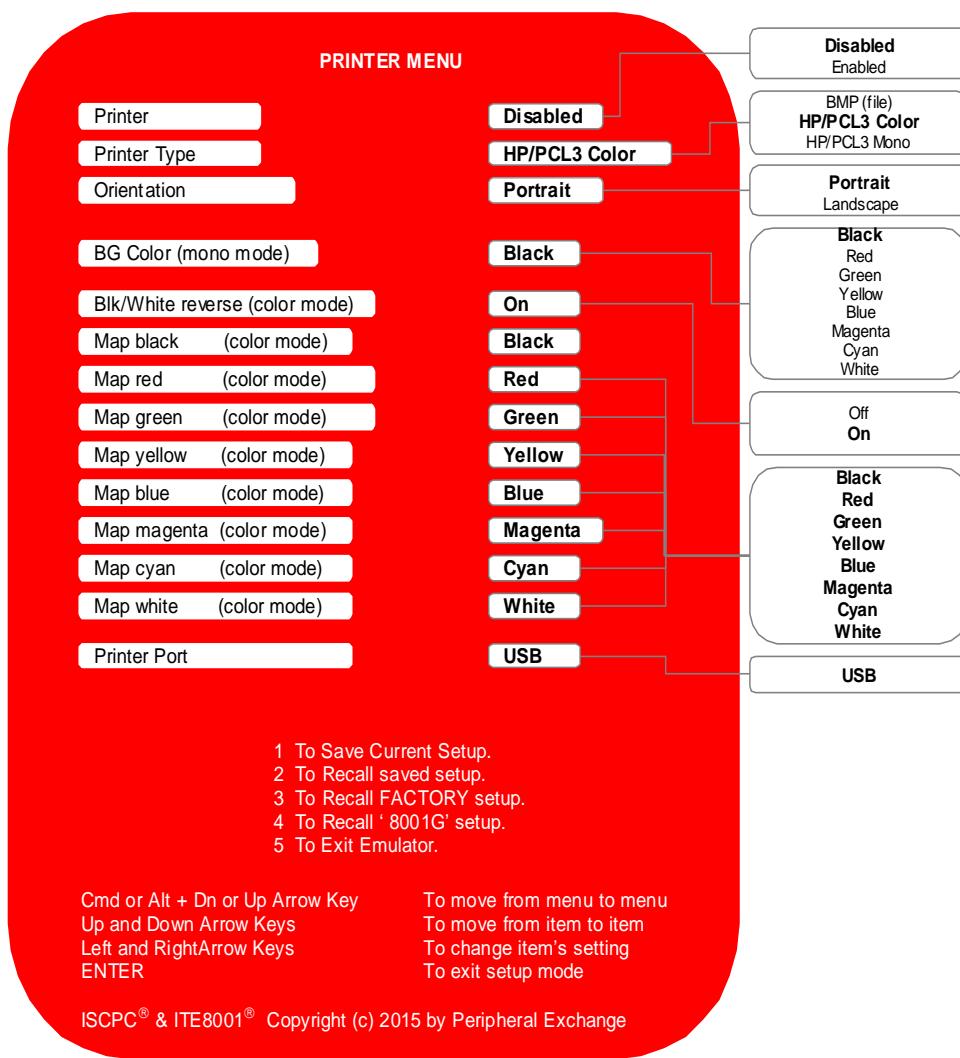
The Keyboard Menu allows changes to parameters dealing with keyboard communications and user-definable function keys.



**Figure 5. Keyboard Menu**

## Printer Menu (Fully functional, but not required by the application)

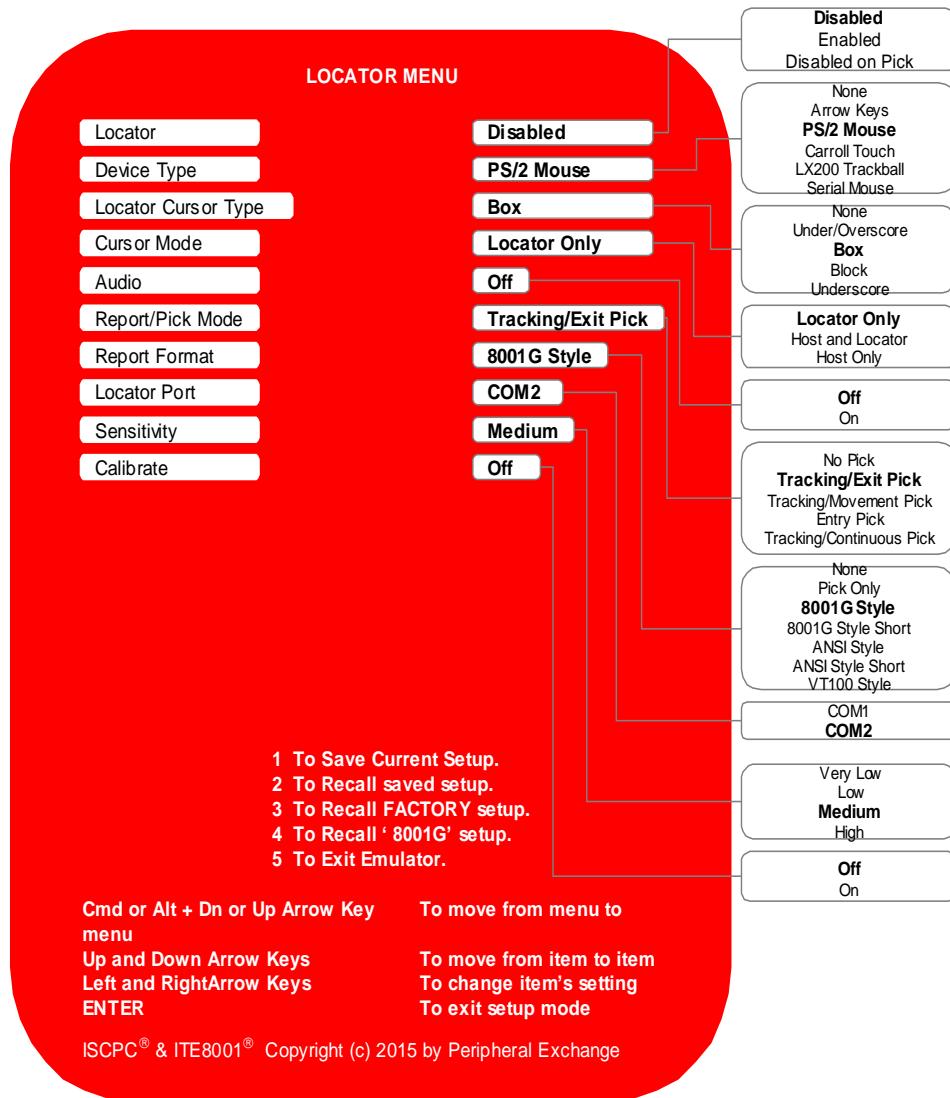
The Printer Menu allows changes to parameters dealing with printer communications and printout preferences. The printer type, orientation, and related parameters may be changed to meet user preference and then saved.



**Figure 6. Printer Menu Selections**

## Locator Menu (Fully functional, but not required by the application)

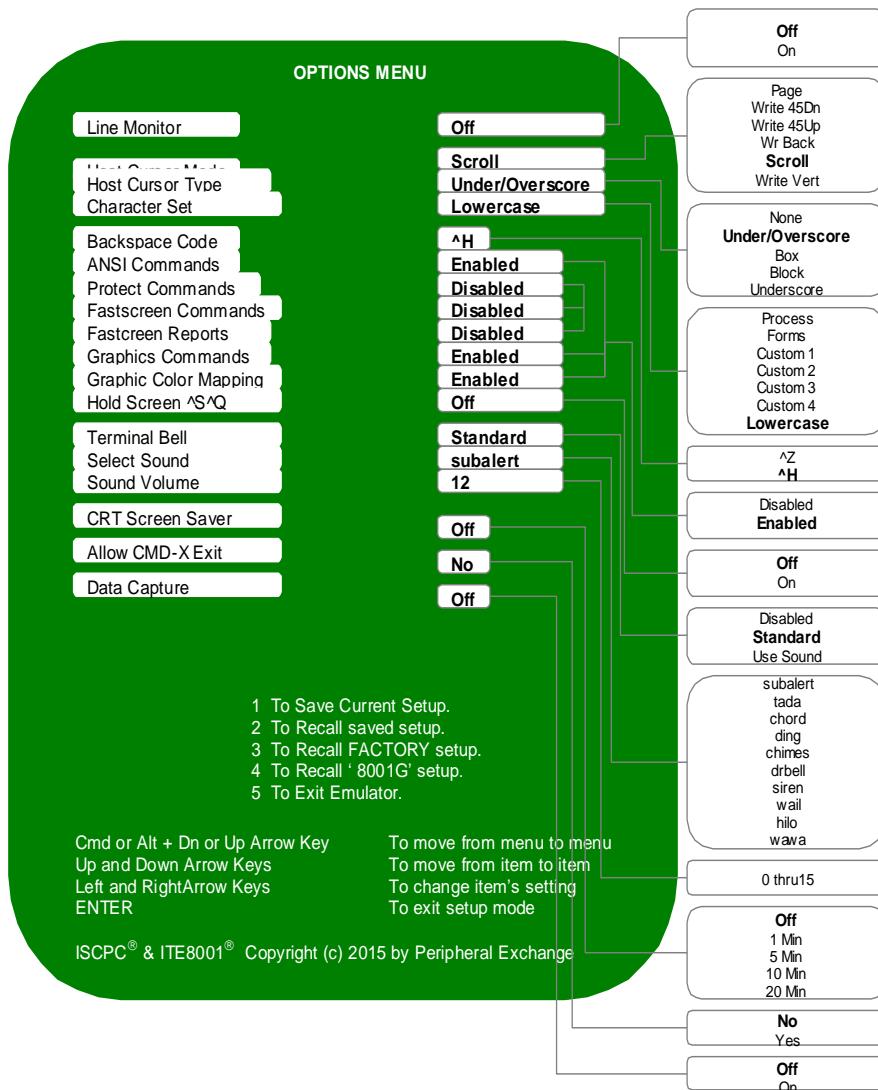
The Locator Menu allows changes to parameters dealing with input device selection, I/O port selection, and host report parameters. The device type, I/O port, data rate, duplex, reporting mode, and related parameters may be changed to meet user preference and saved.



**Figure 7. Locator Menu Selections**

## Options Menu

The Options Menu allows changes to parameters dealing with cursor mode, character set, pixel graphics, Fastscreen, cursor style, and CRT saver functions. The items may be changed to meet user preference and saved.



**Figure 8.** Options Menu Selections

## KEYBOARDS (Fully functional, but not required by the application)

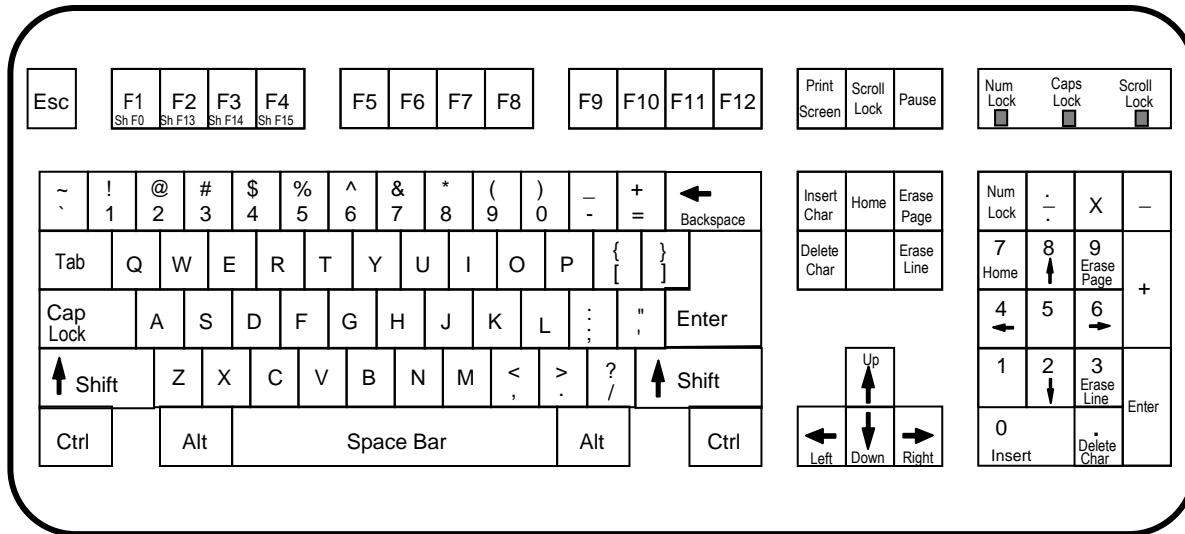


Figure 9. Standard PC 101-Key Keyboard Layout w/ Intecolor® Functions

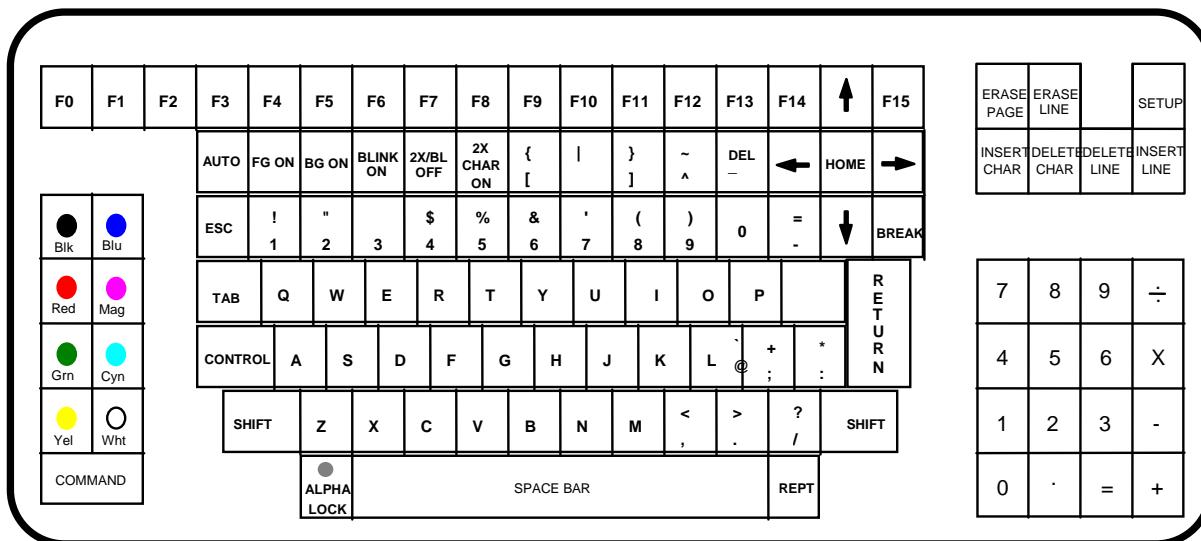
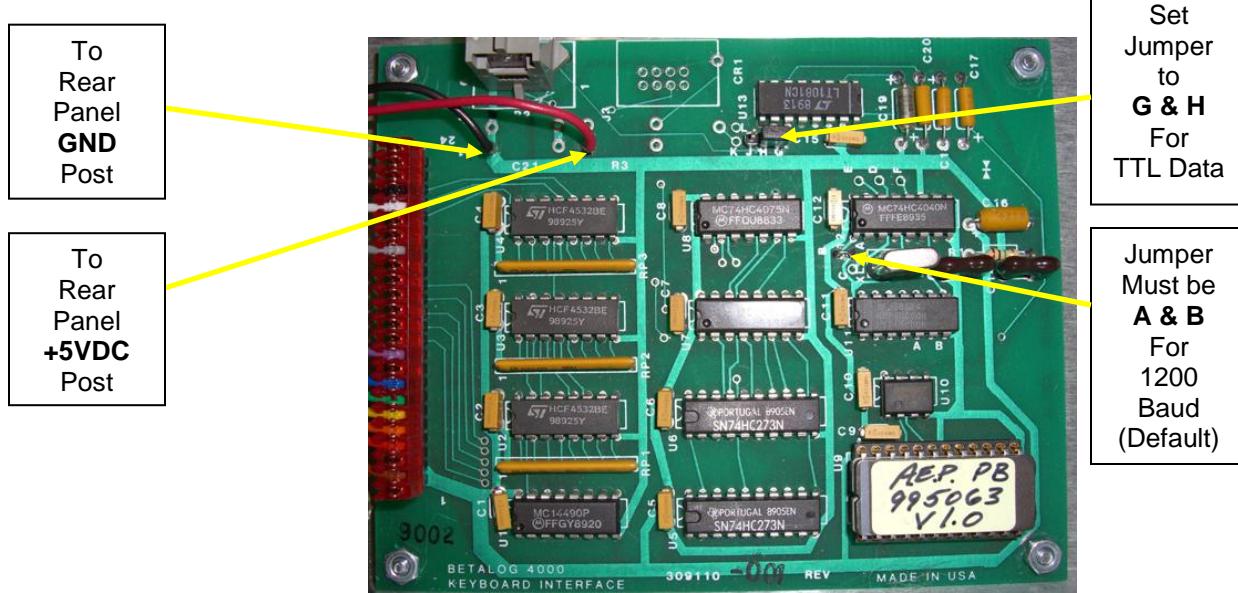


Figure 10. Standard 117-Key Intecolor® Keyboard Layout

NOTE: A custom keyboard is available having 122-keys specifically designed to better emulate the original Intecolor® keyboard. Contact us for more details.

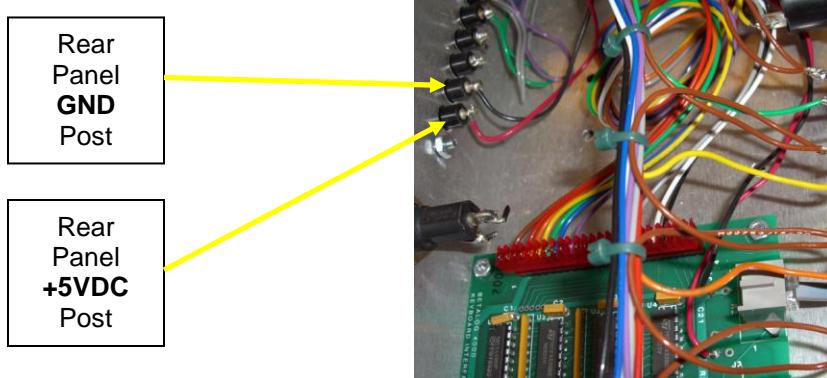
## Betalog 4000 Button Box Details

The original Betalog 4000 button box MUST be modified to function properly with the ISCPC® Emulator. The modifications are slight and relatively easy to perform. Several photos below help locate the areas needing attention.



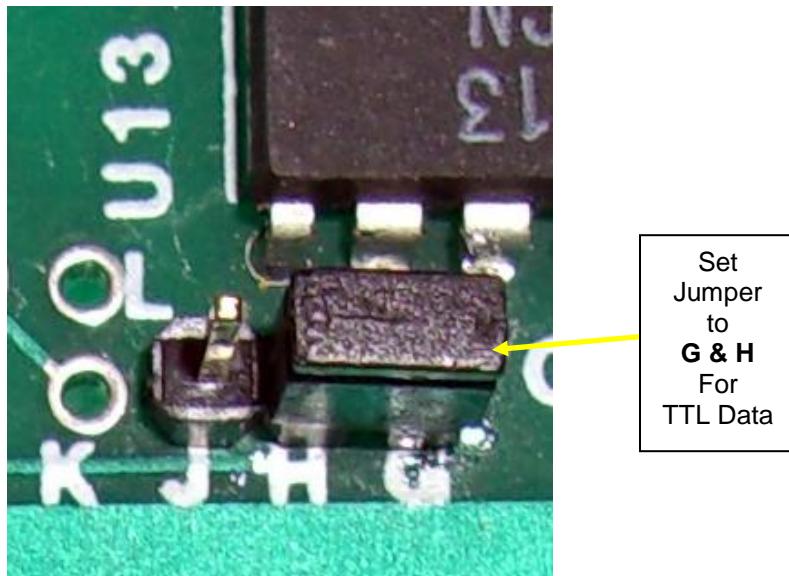
**Figure 11.** Inside view of Betalog 4000 button box PCB

Two wires must be added to allow an external +5DC power supply connection to the PCB. It is suggested that a pair of 20AWG-insulated wire, 1-Red & 1-Black (approx 8" long) be installed as shown. These lead to the two unused positions on the rear terminal block (the 2 right-most posts).

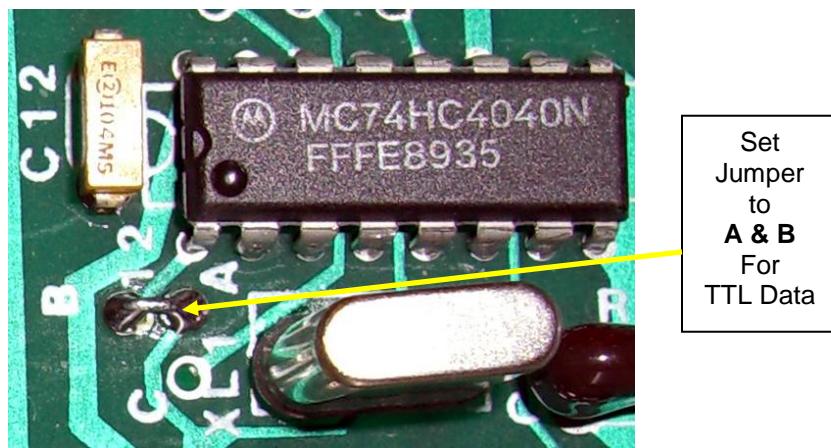


**Figure 12.** Inside view of Betalog 4000 button box showing the rear terminal connections

In addition, remove a hard soldered jump loop from J-H. Install a 3-pin jumper header and then add suitcase jumper to H-G (for 1200 baud operation).



**Figure 13.** Detailed view of (K-J-H-G) jumper area



**Figure 14.** Detailed view of (A-B) jumper area



**Figure 15.** Front view of Betalog 4000 button box

The nine (normally-open momentary-contact) pushbuttons are connected to the Betalog 4000 internal PCB. The codes generated by each button are listed in the table below. These codes are then transmitted via RS-232 interface to the ISCPC® Emulator's COM2 port.

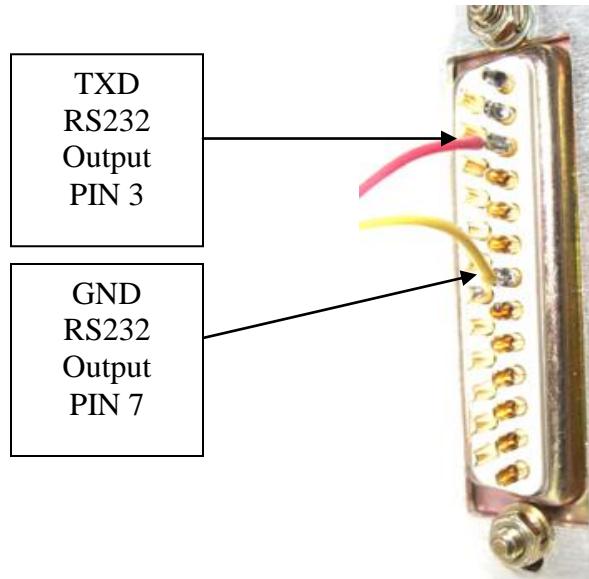
Most of the generated codes are non-standard (to Intecolor® protocol) but are passed through to the host computer via the ISCPC® COM1 port. The actions are defined in the table below.

PUSHBUTTON	CODE	ACTION
PAGE DOWN	0x06	Host action
PAGE UP	0x01	Host action
LINE UP	0x08	Host action
LINE DOWN	0x09	Local action
RESET ACK	0x0B	Host action
ACK	0x02	Host action
RESET	0x10	Host action
TEST	0x0C	Host action
SILENCE	0x0F	Host action

**Figure 16.** Betalog 4000 button box code chart



**Figure 17.** Rear view of Betalog 4000 button box (with +5VDC external power supply)



**Figure 18.** Inside view of Betalog 4000 button box showing DB25F output port

**NOTE:** It is suggested that any other wiring connections be disconnected. The ISCPC® only needs two connections to the Betalog 4000 button box.

SIGNAL TYPE	DB25 PIN OUTPUT	BETALOG J2 PINOUT	WIRE COLOR
DATA	3	2	RED
GROUND	7	4	YELLOW

**Figure 19.** Betalog 4000 internal data cable wiring

NOTE: If an internal cable needs to be constructed from scratch, use a conventional RJ11 4-pin telephone cable cut to 12" in length. Connect a DB25F solder-tail connector as shown above.

NOTE: Use a standard "off-the-shelf" DB9F to DB25M Serial cable (null modem type) must be connected to the ISCPC® "COM2" (DB9), and connected to the Betalog 4000 button box (DB25M). A Belkin® part number F2L088-XX may be used. The XX=03 (3-foot), XX=06 (6-foot). This cable is not supplied.